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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 10/656,010  
Applicant : Lee M. Pike, Jr.  
Filed : September 5, 2003  
Title : AGE-HARDENABLE, CORROSION  
RESISTANT Ni-Cr-Mo ALLOYS  
Group Art Unit : 1742  
Examiner : John P. Sheehan  
Docket No. : 030491

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to:  
Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on

this 1st day of September, 2004.

*[Signature]*  
Buckanan Ingersoll, P.C.

**REQUEST FOR RECONSIDERATION**

Pittsburgh, Pennsylvania

September 1, 2004

Commissioner for Patents  
Post Office Box 1450  
Alexandria, Virginia 22313-1450

Sir:

This is in response to the Office Action dated July 1, 2004. In that Office Action the Examiner rejected claims 1 to 18 under Section 102(e) as anticipated by United States Patent Nos. 6,544,362; 6,610,155; 6,579,388 or 6,638,373. Specifically, the Examiner identified Alloy N in the '362 and '373 patents and Alloy 11 in the '155 and '388 patents. The Examiner also rejected the claims under the judicially created doctrine of obviousness-type double patenting over claims 1 to 17 of U.S. Patent No. 6,638,373.

Submitted herewith is a Declaration of Dwaine Klarstrom who is a co-inventor with applicant of the cited '362, '155, '388 and '373 patents. Dr. Klarstrom states that the experimental alloys in the '362, '155, '388 and '373 patents were all made by or under the direction of Lee M. Pike, Jr., the applicant here. Moreover, Dr. Klarstrom says that Lee Pike is the sole inventor of

the experimental alloys. For this reason the cited alloys are not the invention of another.

Reconsideration and withdrawal of the rejection under Section 102(e) are respectfully requested.

The obviousness-type double patenting rejection is proper only if the claims in the present application are an obvious variation of the invention defined in the claims of the '373 patent. MPEP § 804(II)(B1)(a). In the Office Action the Examiner asserts that the claimed invention would have been obvious from the claims of the '373 patent "because the claimed alloy proportions in these two sets of claims overlap and therefore are considered to be *prima facie* obvious." As pointed out by the Court of Appeals for the Federal Circuit in In re Peterson, 65 USPQ2d, 1379, 1383 (Fed. Cir. 2003)

"In general an applicant may overcome a *prima facie* case of obviousness by establishing 'that the [claimed] range is critical generally by showing that the claimed range achieves unexpected results relative to the prior art range.'" *In re Geisler*, 116 F.3d at 1469-70; 43 USPQ2d at 1365 . . .

Alternatively an applicant may rebut a *prima facie* case of obvious by showing the prior art teaches away from the claimed invention in any material respect." 65 USPQ2d at 1384.

Applicant submits that the tests set forth in the specification show unexpected results. Applicant further submits that the '373 patent teaches away from the claimed invention. Therefore, applicant has overcome the *prima facie* case of obviousness and the obviousness-type double patenting rejection should be withdrawn.

The '373 patent discloses and claims an alloy that is subject to a two step aging treatment. This nickel-chromium-molybdenum alloys has a composition within the ranges set forth in the claims and must be processed with a two step heat treatment to achieve higher yield strength, high tensile strength and other mechanical properties comparable to those observed in similar alloys age hardened under then current practices. The alloy teaches at claim 4, lines 6-10, that

this alloy has a higher chromium content which makes the alloy suitable for use as a corrosion resistant alloy in the chemical process industry. It also says that the objective was to determine "a definable class of high chromium content alloys which would exhibit acceptable mechanical properties when subjected to a relatively short two step aging process." At lines 21-24, the '373 patent says, "We provide a two-step aging treatment for Ni-Cr-Mo alloys containing from 12% to 23.5% chromium to produce an alloy for applications requiring corrosion resistance." From these statements one skilled in the art would understand that all alloy compositions within the claims would exhibit corrosion resistance. But, one would not know that some alloy compositions within the claims of the '373 patent would exhibit corrosion resistance that is significantly different from other alloy compositions within those claims. Indeed, Dr. Klarstrom says, "Those skilled in the art would expect all alloy compositions within the ranges of the cited patents to have similar corrosion properties." Declaration, pp. 2-3.

The present application discloses and claims a nickel-chromium-molybdenum alloy which can be age hardened to provide high strength and which also possesses high resistance to corrosion attack in both oxidizing and reducing media while in the age hardened condition. The specification reports tests on experimental alloys A through Q. Corrosion testing revealed that alloys A, B, F, I, J, K and L had unacceptable corrosion resistance in either or both corrosive media. Yet, all of these alloys are within claim 1 of the '373 patent. Applicant has discovered that within the broader range of alloy compositions disclosed in the '373 patent there is a narrower range of alloy compositions that are resistant to corrosion in both reducing and oxidizing media. The compositions differ primarily in the chromium and molybdenum levels whose ranges are much smaller in the pending claims than they are in the '373 patent. Moreover,

the data presented shows that it is these ranges as well as the P value that are responsible for the improved corrosion resistance. Specifically, in experimental alloys A and L the molybdenum level is too high to achieve improved corrosion resistance in both oxidizing media and reducing media. In experimental alloy B, the chromium level is too high. In experimental alloys F, I and J the chromium level is too low. The molybdenum level is also too high in experimental alloy I. Finally, alloy K had a P value which is too low to achieve the improved corrosion resistance.

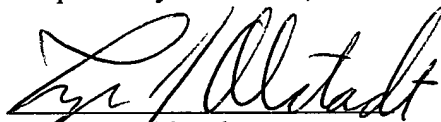
In all of the cases cited in the Office Action the Court recognized that one can overcome a case of prima facie obvious by showing unexpected results. In those decisions there was a failure of proof so the rejection was affirmed. Here, however, applicant's data demonstrates unexpected improved corrosion resistance in both oxidizing media and reducing media when the chromium and molybdenum levels as well as the P value are within the ranges of applicant's claims. Such evidence overcomes the showing of prima facie obviousness.

The '373 patent teaches away from the present claims in that the patent's limited discussion of corrosion resistance of the claimed alloys indicates that all alloy compositions within the claims of that patent would have similar corrosion properties. Applicant's tests have demonstrated that that is not true. Compositions within the claims of the present application have unexpectedly better corrosion resistant properties than other alloy compositions within the claims of the '373 patent but outside the claims of the present invention. Consequently, the showing of prima facie obviousness has been overcome.

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Request for Reconsideration dated September 1, 2004  
Reply to Office Action of July 1, 2004

For the foregoing reasons, applicant submits that the rejection under Section 102(e) and the obviousness-type double patenting rejections have been overcome. Reconsideration and withdrawal of those rejections are respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Lynn J. Alstadt", written over a horizontal line.

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